

Remarks

Applicant filed a Notice of Appeal for this case, with the Notice of Appeal being mailed to the Office on March 16, 2003, which was three months after the mailing date of the Final Office Action dated December 16, 2003. The applicant has studied the Office Action and has made the changes believed appropriate to place the application in condition for allowance. Claims 2-4, 6, 8, 16 and 19-23 are currently pending. Claims 1, 5, 7, 9-15, 17-18 and 24-26 have been canceled without prejudice. Applicant has amended claims 2, 3, 16 and 19. These claims have been rewritten in independent form. It is respectfully submitted that these amendments will not require a new search or raise new issues for consideration by the Examiner. It is submitted that these amendments place the application in better form for appeal should the case not be allowed. These amendments were not presented earlier because they were deemed appropriate to advance prosecution after receipt of the December 16, 2003 Office Action. The Examiner is therefore respectfully requested to enter and consider these amendments to the specification after the final rejection.

Claims 25-26 were withdrawn from consideration by the Examiner. Applicant does not understand the Examiner's explanation regarding the restriction requirement. However, to expedite prosecution, application has canceled claims 25-26 without prejudice to further prosecute these claims.

Claims 1-2, 15-16 and 20 were rejected under 35 U.S.C. 102(e) as unpatentable over Koo et al. (US 6,262,446). The rejection is respectfully traversed. Applicant has canceled claims 1 and 15 without prejudice to further prosecute these claims. Claims 2 and 16 have been rewritten in independent form. Claim 20 depends from claim 19, which has been rewritten in independent form and which is discussed later in this paper. Applicant believes that these changes do not introduce any new subject matter to the case and place the case into better condition for appeal.

Applicant respectfully submits that the Examiner's rejection of claim 2 is deficient. The Examiner stated on page 3 of the Office Action that Koo teaches "forming a word line and a connection layer between the lower electrode and a separate element (Fig. 4 (16e) and Col. 7, lines: 10-20)." It appears that the Examiner considers reference number 16e of Koo to be a "lower electrode" as recited in claim 2. However, while Koo refers to 16e as a "lower electrode pattern," it is clear from Fig. 4 that reference number 16e is not part of a capacitor, because it has

no dielectric layer and upper electrode layer on it. Thus 16e is not a "lower electrode of the second capacitor" as recited in claim 2. Applicant notes that the Examiner in the Office Action on page 3, line 3, did not refer to reference number 16e as a lower electrode but instead referred to other reference numbers as lower electrodes of capacitors.

In addition, Koo shows in Fig. 4 and expressly states that "the psuedo-capacitors 21, 22 and 23 are also formed at the peripheral region, they are not electrically connected to an underlying contact plug. Therefore, these capacitor patterns 21, 22 and 23 do not serve as capacitors." Koo at Col. 6, lines 3-6. Furthermore, the capacitor patterns 21, 22 and 23 do not appear to have their lower electrodes (16f, 16h, 16i) electrically connected to any other component.

Thus, the Examiner's citations to Koo do not describe or suggest a method including "simultaneously forming a word line that is a component of the DRAM and a connection layer that is located in a common layer of the word line and that electrically connects the lower electrode to another element in the semiconductor device" as recited in claim 2. Accordingly, the rejection of claim 2 should be withdrawn. Claim 16 was rejected in a similar manner as claim 2. Applicant respectfully submits that for at least the same reasons as claim 2, the rejection of claim 16 should be withdrawn.

Claim 20 depends from claim 19, which is discussed below. Applicant respectfully submits that the rejection of claim 20 should be withdrawn for at least the same reasons as claim 16 as discussed below.

Claims 3-8, 17-19 and 21-23 were rejected under 35 U.S.C. 103(a) as unpatentable over Koo in view of U.S. Patent No. 6,110,772 to Takada et al. ("Takada"). The rejection is respectfully traversed. Claim 3 has been rewritten in independent form. Claims 5, 7 and 17-18 have been canceled without prejudice to further prosecute these claims. Claim 19 has been rewritten in independent form.

Applicant respectfully submits that the Examiner's rejection of claim 3 is deficient. The Examiner stated on page 4 of the Office Action that Takada teaches "forming a first resistance element and a second resistance element in the analog region by ion implantation (Fig. 14 (resistance element) and Col. 7, lines 30-40), wherein the first element is doped more than the second (Col. 8, lines 15-30). Applicant notes that Fig. 14 of Takada and the portions cited by the

Examiner do not appear to describe "(d) forming a first resistance element and a second resistance element in the analog element region" as recited in claim 3. Instead, it appears that Takada as cited by the Examiner only describes one resistance element.

Moreover, the Examiner cited no portion of the art that would describe or suggest that "the step (d) is carried out simultaneously with step (c)" as recited in claim 3. As seen in Fig. 14 of Takada, the resistance element includes layer 23 and the capacitor element includes lower electrode layer 24 and upper electrode layer 38. As seen in Takada Figs. 9-13, as explained in Takada at column 7 to col. 8, the resistance element layer 23 is formed prior to both the lower electrode layer 24 and the upper electrode layer 38. Thus, it appears that Takada as cited by the Examiner does not teach "simultaneously" carrying out the steps as recited in claim 3.

Furthermore, the Examiner at page 4 of the Office Action cited col. 8, lines 15-30 as describing or suggesting that "the first element is doped more than the second." Applicant notes that these lines do not appear to teach forming two resistance elements and performing ion-implantations as recited in claim 3.

Dependent claims 4, 6 and 8 each depend from claim 2. Applicant respectfully submits that the Examiner's citations to Takada do not overcome the deficiencies of the rejection of claim 2 over Koo as explained above. Thus, the rejection of claims 4, 6 and 8 should be withdrawn for at least similar reasons as explained above for claim 2. In addition, applicant respectfully submits that Takada as cited by the Examiner does not describe or suggest method including "(d) forming a first resistance element and a second resistance element in the analog element region", and "the step (d) is carried out simultaneously with step (c)" as recited in claims 4, 6 and 8. Furthermore, the Examiner's citations to the art do not appear to describe or suggest methods in which "a resistance value of the first resistance element is lower than a resistance value of the second resistance element" as recited in claims 4 and 6. In addition, applicant notes that the portion of Takada cited by the Examiner (col. 8, lines 15-30) does not appear to describe forming a silicide layer as recited in claim 8.

For at least the above reasons, applicant respectfully submits that the rejection of claims 3, 4, 6 and 8 should be withdrawn.

Claim 19 has been rewritten in independent form. Applicant respectfully submits that the Examiner cited no portion of the art that describes or suggests a method "wherein the etching a

portion of the second conducting layer also forms a first resistance element and a second resistance element in the analog element region" as recited in claim 19. As noted above, it appears that the resistance element shown in Fig. 14 of Takada is formed by a method in which the resistance element layer 23 is formed prior to both the lower electrode layer 24 and the upper electrode layer 38 of the capacitor element. Thus, the method of Takada does not suggest "etching a portion of the second conducting layer also forms a first resistance element and a second resistance element." Accordingly, the rejection of claim 19 should be withdrawn.

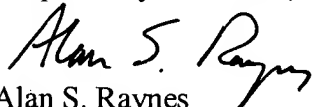
Claim 21 depends from claim 20, which depends from claim 19. Applicant respectfully submits that claim 21 is patentable over the cited art for at least the same reasons as claim 19.

Claims 22-23 depend from claim 19 and are patentable over the cited art for at least the same reasons as claim 19.

The Examiner made various comments in the Office Action concerning the non-patentability of certain features of the present invention. Applicant respectfully disagrees. In addition, the Examiner's comments that have not been discussed above are deemed moot at this time in view of this response.

Applicant respectfully submits that the pending claims are in condition for allowance. Reexamination and reconsideration are respectfully requested. If, for any reason, the application is not in condition for allowance, the Examiner requested to telephone the undersigned to discuss the steps necessary to place the application into condition for allowance.

Respectfully submitted,



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